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**MERCER**

Investment Consulting

May 16, 2003

**Total Fund Review - First Quarter  
Board Meeting**  
Arizona State Retirement System

**Terry A. Dennison**

Los Angeles



Marsh & McLennan Companies

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# **Economic/Market Overview**

First Quarter, 2003



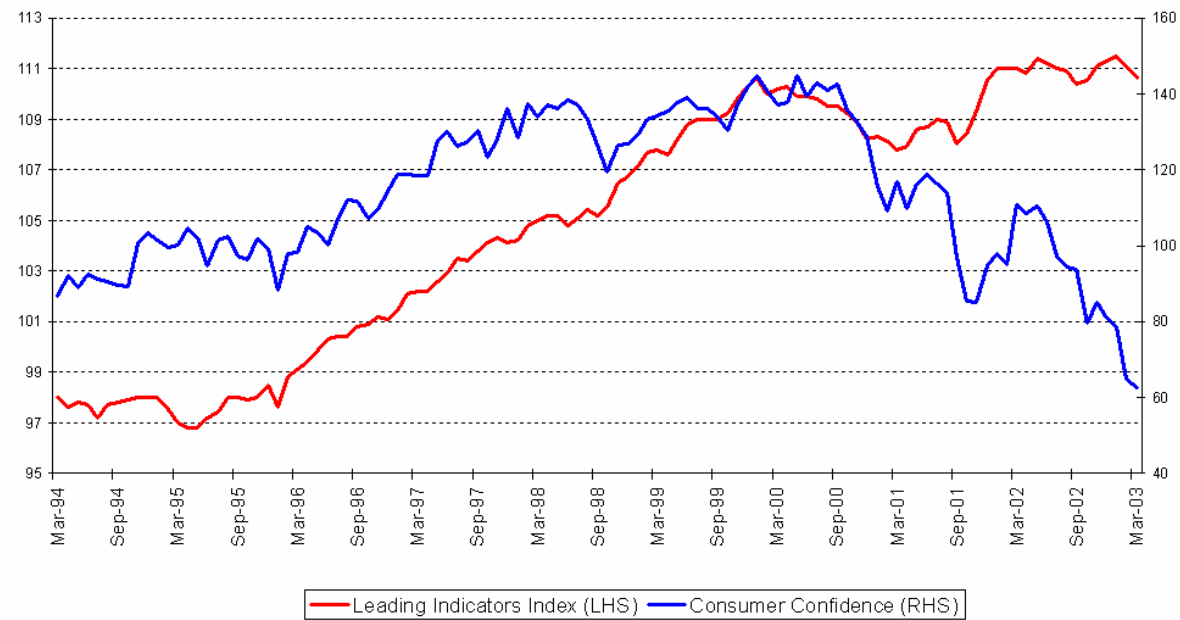
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## **War, SARS, and Weak Employment Show No Clear Path To Recovery**

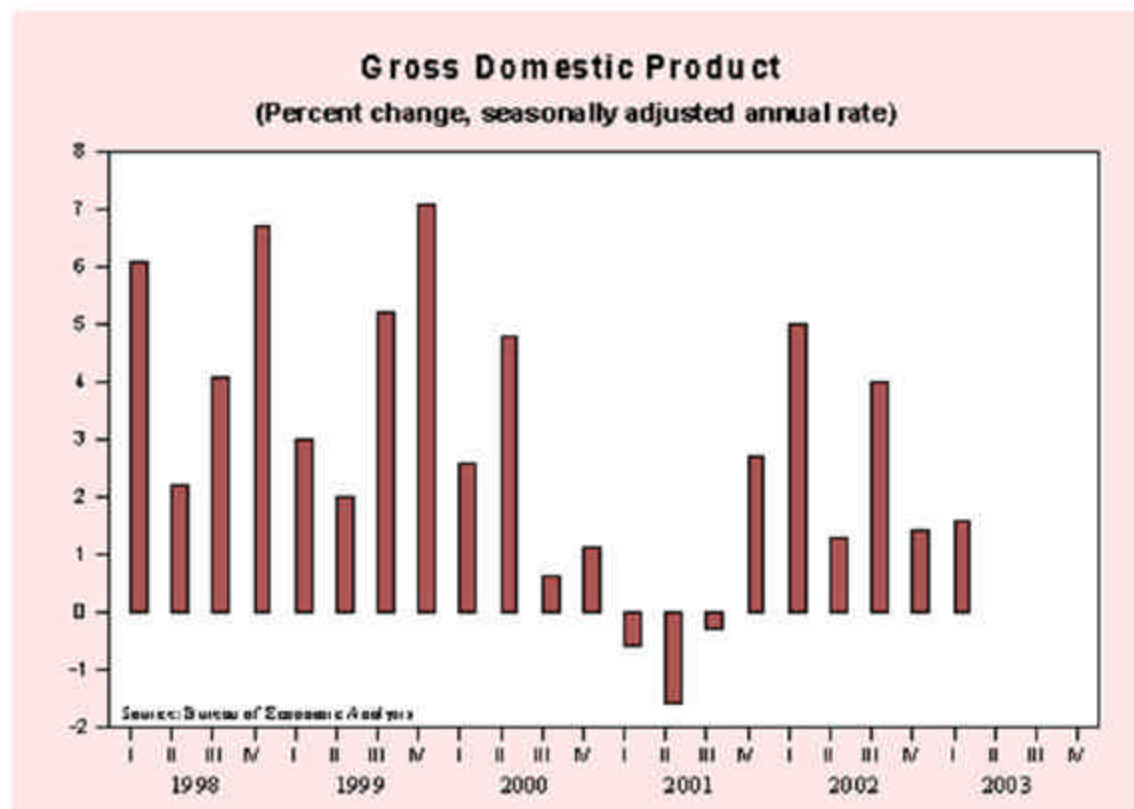
- Consumer confidence fell sharply, ending the quarter near a 10-year low.
- Factory orders fell off sharply in February.
- Leading indicators turned negative in February and March signaling sluggish near term economic activity.
- First quarter GDP estimated at 1.6%, only slightly ahead of fourth quarter.
- The unemployment rate held at 5.8% in March.
- Durable goods orders rose in March by 2.0% showing some improvement in business spending with computer and electronics gaining 4.0% in March.

# Consumers are Worried About the Future

Leading Indicators vs. Consumer Confidence



## Gross Domestic Product Growth is Positive But Very Modest



## Unemployment Rate Continues to Indicate a 'Jobless Recovery'

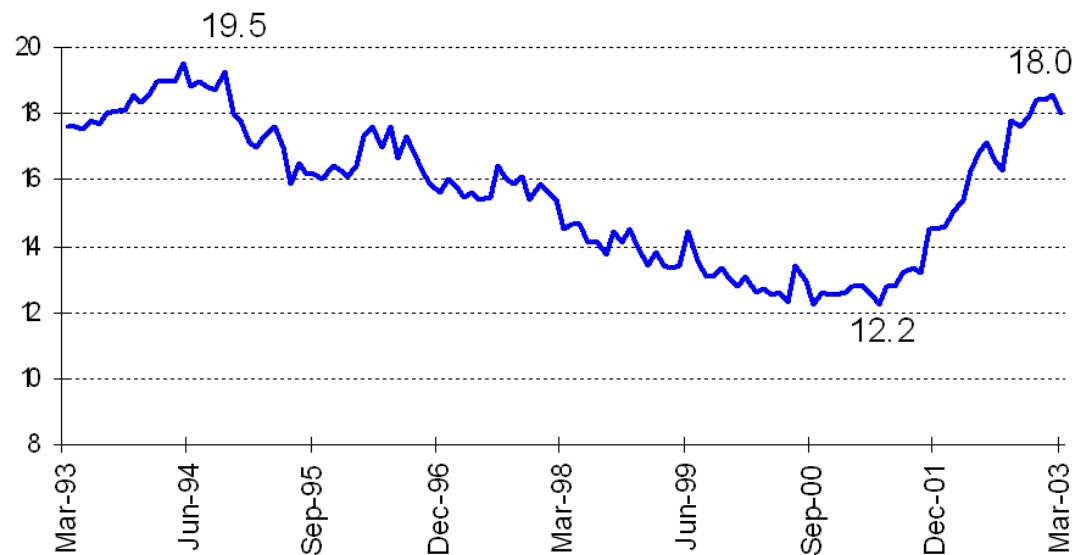
Unemployment rate (seasonally adjusted)



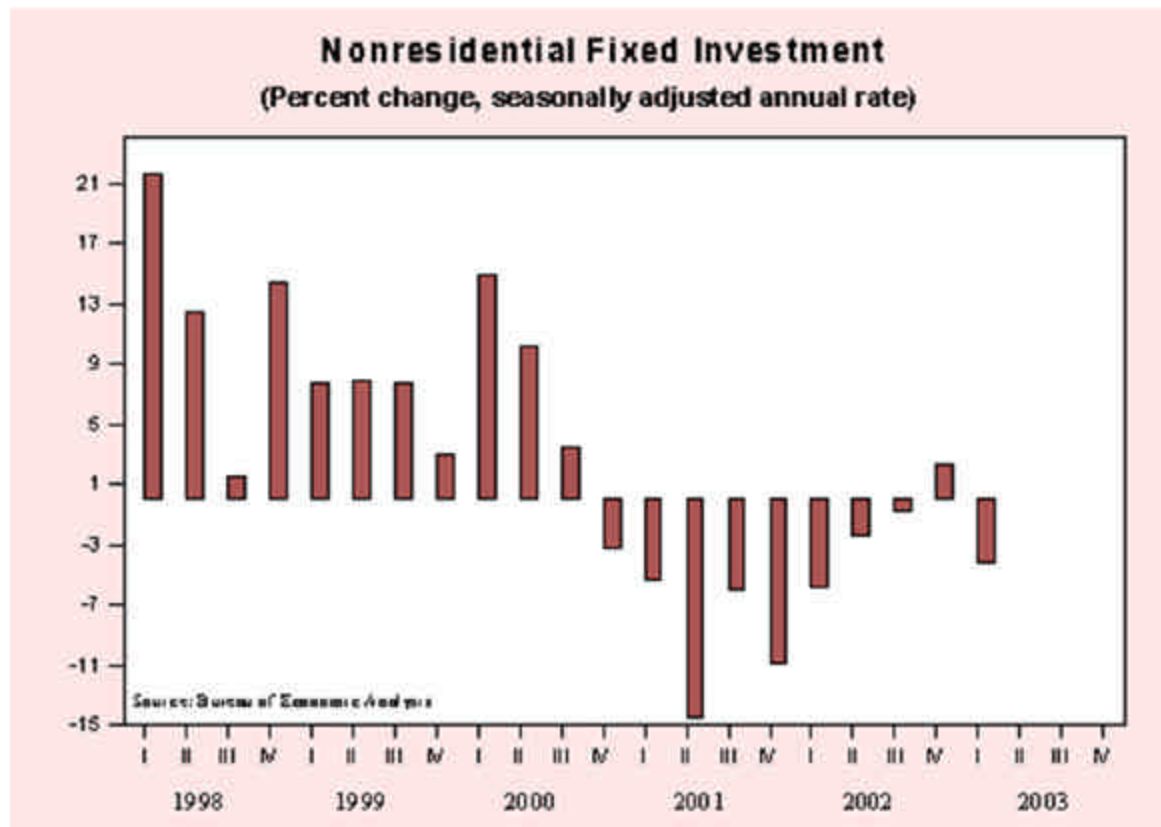
Note: Cross-hatched area represents recession. Vertical line indicates a break in series in January 1994 due to redesign of the survey.

## Jobs Seekers are Finding Jobs are Scarce

Average Duration of Unemployment (weeks)



## Business Investment Slips Back into Negative Territory



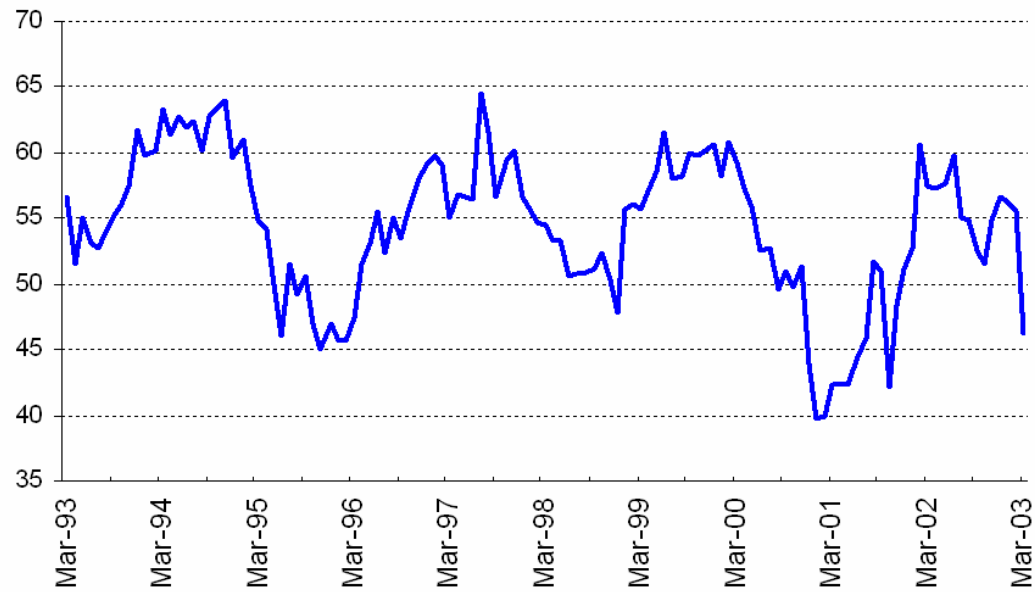


## Business Investment is the Key to Recovery

Business Investment Growth			
Growth Rate (% per year)	1974-1995	1996-2000	2001-2002
Business Total	3.9	10.1	-5.5
Information Technology	16.0	23.2	-2.7
Non-Information Technology	1.7	5.5	-6.6
Source: Bureau of Economic Analysis, UBS Global Asset Management			

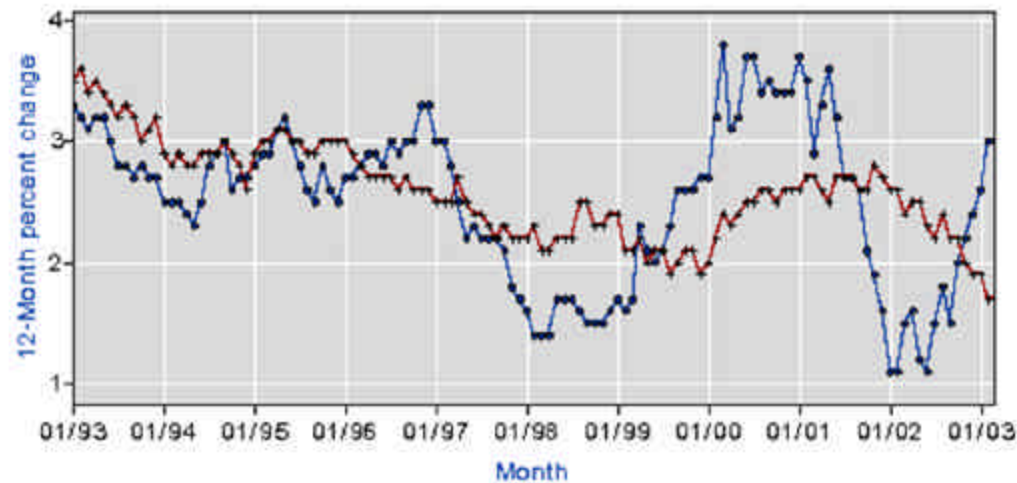
## Purchase Managers Index Shows a Steep Decline

NAPM Production Index



## Inflation Has Declined During the Recession Energy Prices Soared as War Concerns Rose

Consumer Price Index for All Urban Consumers: U.S. City Average, All Items and All Items Less Food and Energy



All items

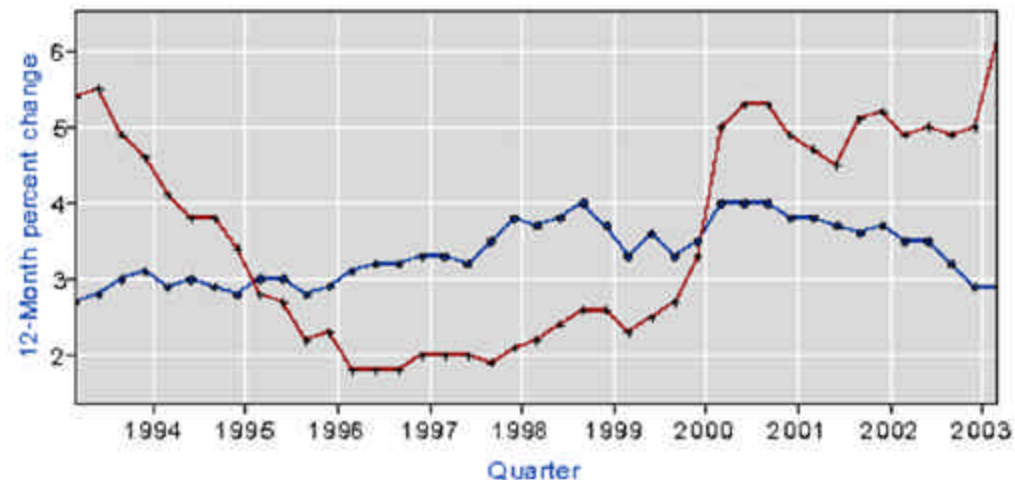


All items less food and energy

## **Recession Stabilized Employment Cost Index**

Wage Costs Are Decreasing While Benefits, Driven by Health Care Costs, Continue to Increase

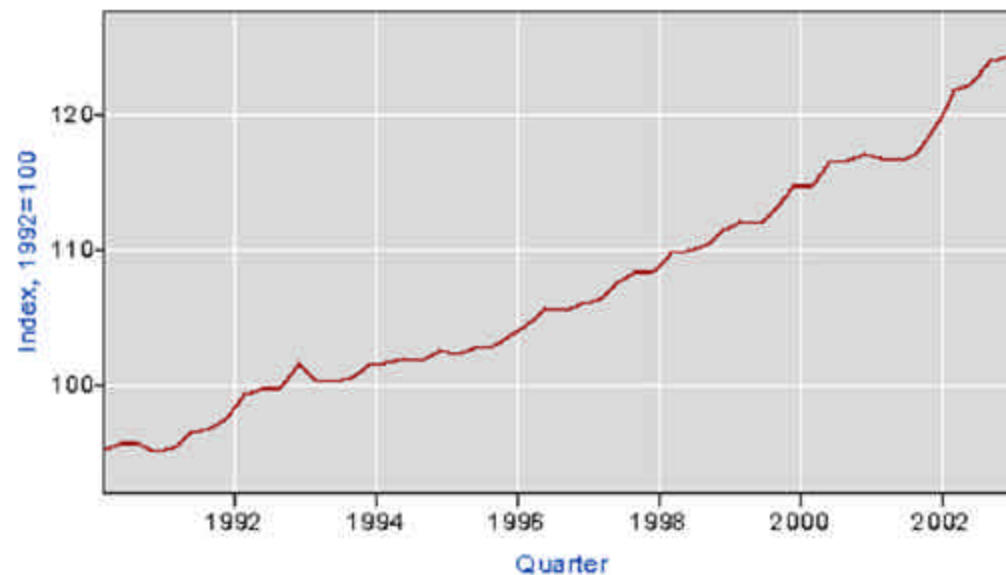
Employment Cost Index for civilian workers, Changes in wages and salaries and benefit costs



Wages and Salaries  
Benefits

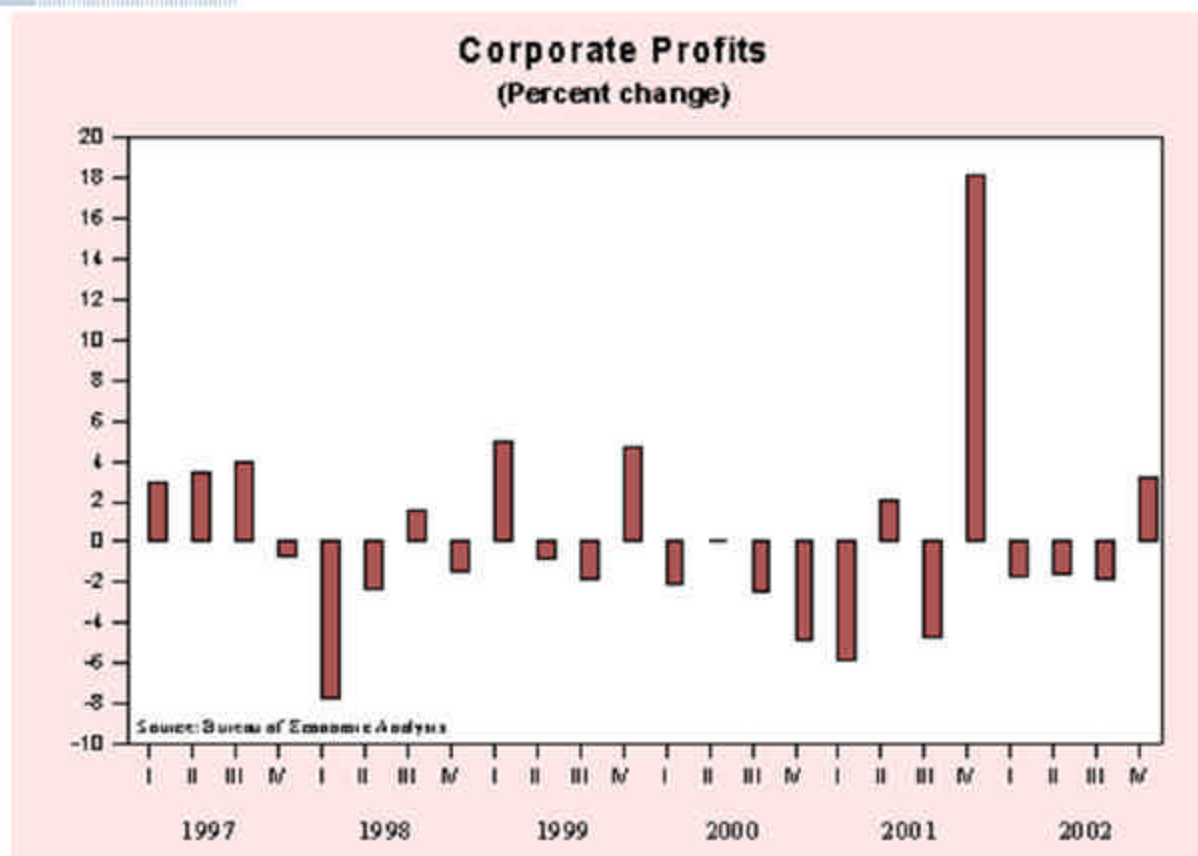
## **Productivity Increases Through Recession** Likely to Lead to Significant Earnings Increases When Final Demand Increases

Quarterly productivity in the nonfarm business sector



Note: Labor productivity is output per hour worked

## Corporate Profits Nose Upward



## The Investment Implications of Iraq

- Parallels with the first Gulf War
  - In mid-1990 the U.S. and the rest of the world were experiencing sub-par economic performance
  - The U.S. was dealing with another scandal, the savings and loan mess
  - Before Desert Storm began, the markets were very nervous. There were concerns that the U.S. and its allies could not remove Iraqi forces from Kuwait without a horrific fight
  - When Desert Storm began, the markets advanced strongly, reacting very favorably to the decisive U.S. effort
  - At the end of the ground war, the market had rallied 18.7% from the day before the start of the air campaign
  - However, the economy did not improve and the markets moved sideways for the remainder of 1991

## Possible Scenarios and Their Investment Impact

### Three Possible Outcomes

- **A decisive seizure within the first three to five days**
  - **Iraqi army collapses or mutinies, few civilian casualties, and muted Arab reaction**
  - **Probable result — oil prices decline and the markets rally**
- *A quagmire like Vietnam; no end in sight*
  - *Massive resistance, little progress, and large numbers of military and civilian casualties; hostile Arab reaction; and geopolitical situation deteriorates*
  - *Probable result — massive oil price increases, supply interruptions, very significant declines in markets*
- *A relatively quick war with periods of intense resistance but producing a victory in a period of several weeks*
  - *Probable result — markets volatile, following progress of the war*



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# **Securities Markets**

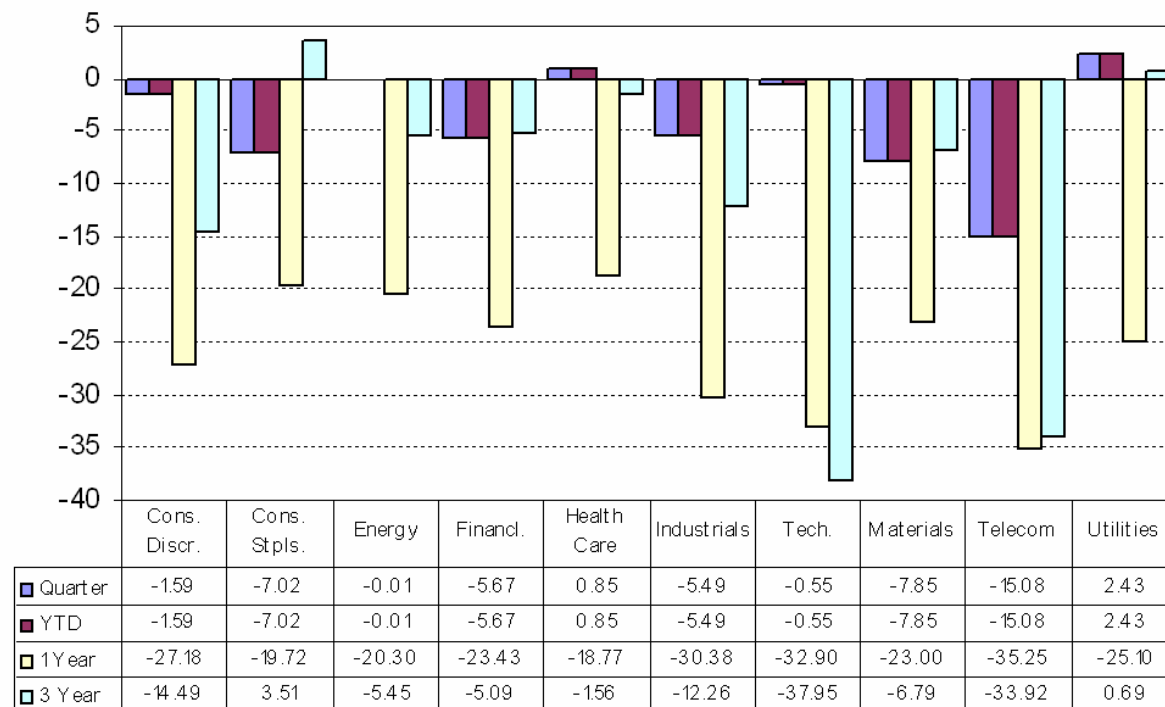
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## **Domestic Equity**

- 2003 begins with losses in January and February, March saw gains on war progress.
- Major equity indices approached their 5-year lows in March before an 8-day rally.
- Mid cap stocks fared better than large cap stocks, which in turn outperformed small cap stocks.
- Growth stocks held up better than value stocks across the market cap spectrum during the quarter.
- Health care and utilities were the only sectors to post gains while telecommunications issuers led the declines.

## Domestic Equity

S&P 500 Sector Performance



## Every Segment of the Market Declined

- Declines were mostly mid-single digit
- Small value, the best performer for the last three years, was the weakest

1Q03 Returns	Value	Core	Growth
<b>Large</b>	<b>-4.86</b>	<b>-2.93</b>	<b>-1.07</b>
<b>Mid</b>	<b>-4.06</b>	<b>-2.36</b>	<b>-0.02</b>
<b>Small</b>	<b>-5.08</b>	<b>-4.49</b>	<b>-3.89</b>
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Total, Growth			

## One-Year Returns Are Very Negative

- All returns are double-digit negative
- Growth was down the most of the styles

1 Year Returns	Value	Core	Growth
Large	-22.79	-24.51	-26.77
Mid	-19.67	-21.50	-26.11
Small	-23.27	-26.97	-31.64
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Core, Growth			

## Three-Year Results Show Strength of Value Over Growth

- Returns positive only for Mid/Small Value
- Growth returns for all cap ranges are negative twenties

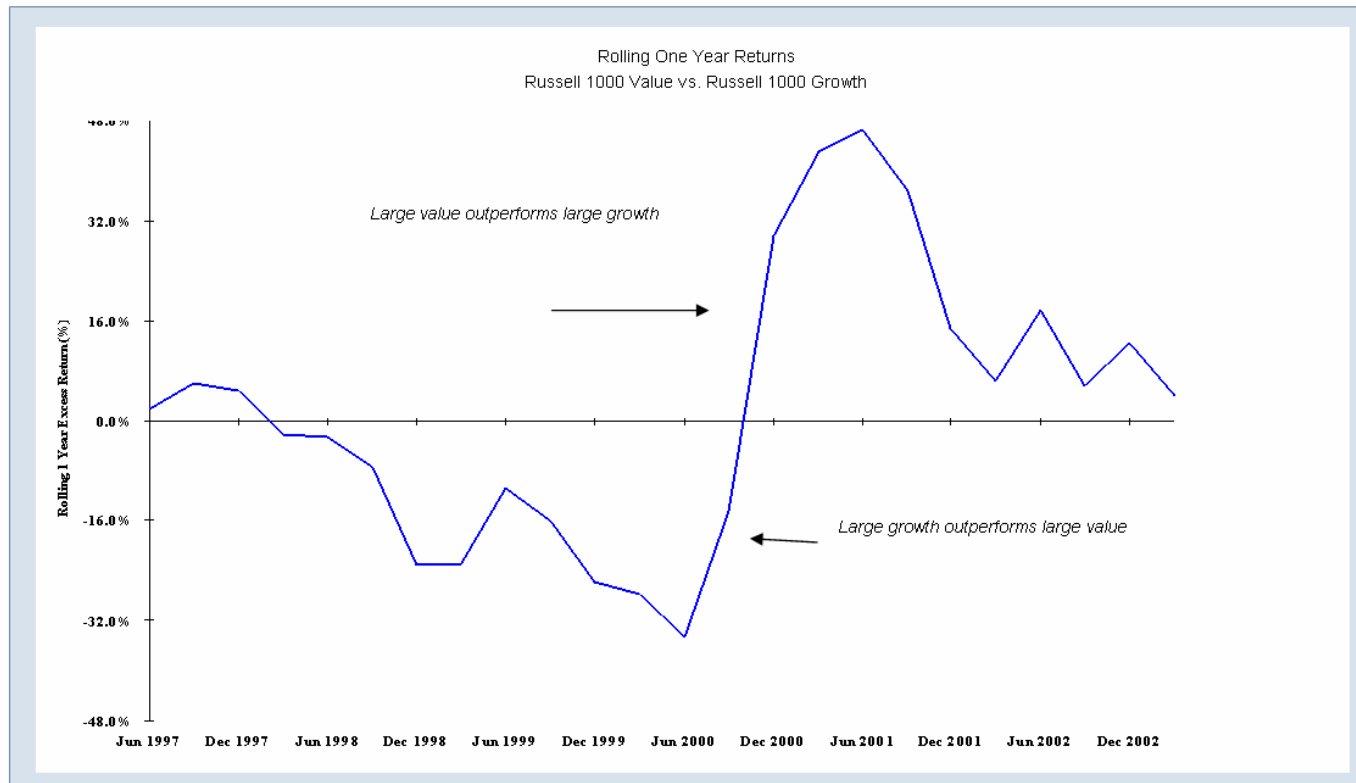
3 Year Returns	Value	Core	Growth
Large	-6.86	-16.22	-25.65
Mid	1.53	-8.76	-24.98
Small	4.28	-11.00	-24.42
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Total, Growth			

## Cumulative Three-Year Returns Show the Real Effect on Wealth

- Large growth has lost more than 55% of value during the period
- Small value stocks increased by more than 13%

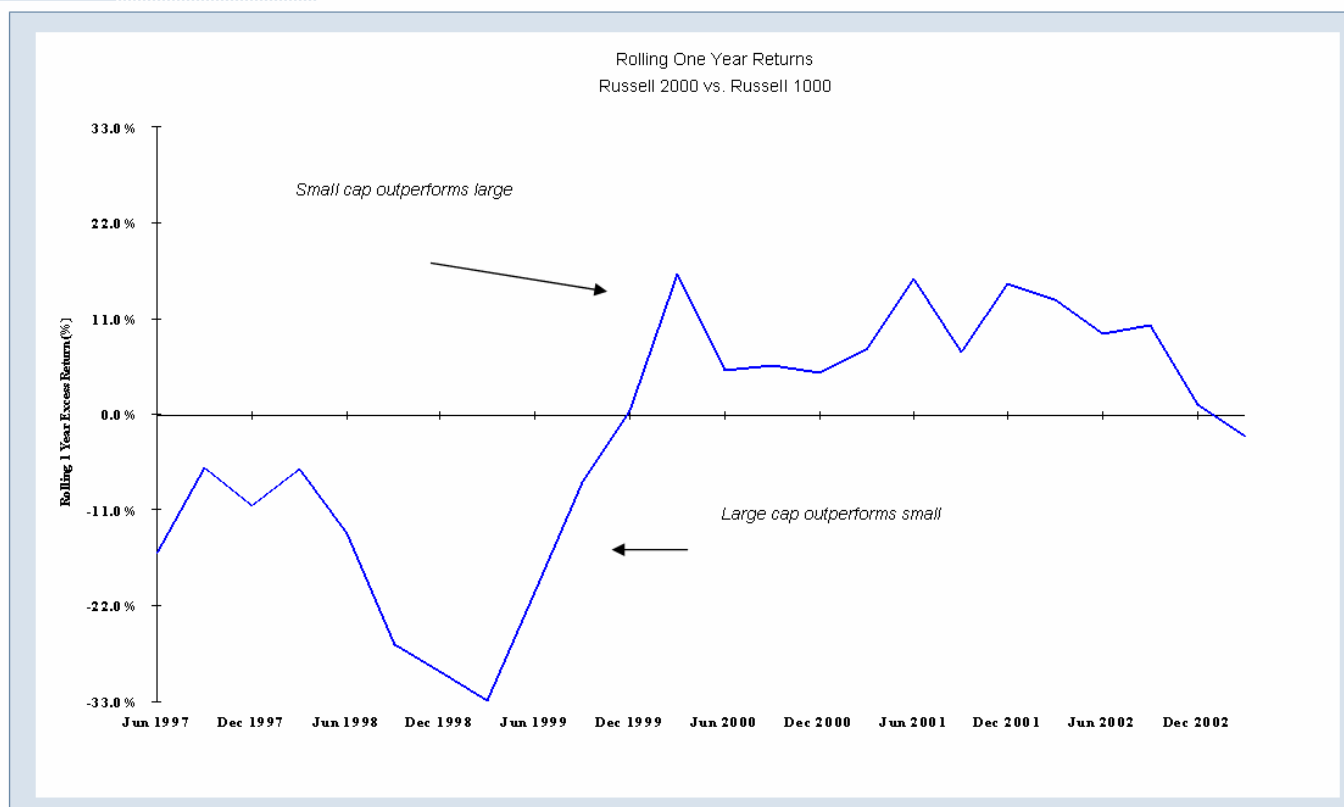
Cumulative 3 Yr	Value	Core	Growth
<b>Large</b>	<b>-19.20</b>	<b>-41.19</b>	<b>-58.90</b>
<b>Mid</b>	<b>4.66</b>	<b>-24.05</b>	<b>-57.78</b>
<b>Small</b>	<b>13.40</b>	<b>-29.50</b>	<b>-56.83</b>
Note: Russell 1000, Mid-Cap, 2000 Indices; Value, Total, Growth			

## Growth vs. Value Cycle Moves Toward Neutral





## Large vs. Small Cycle Moves Toward Neutral



# Largest Positive and Negative Contributors to the S&P 500

**S&P 500 Quarter Return: -3.15%**

## 25 Largest Positive Contributors to the S&P 500

Stock	Return (%)	End of Quarter Weight	Rank
JOHNSON & JOHNSON	7.75%	2.20%	7
AMGEN INC	19.05%	0.95%	18
GENERALELEC CO	4.72%	3.26%	2
COMCAST CORP NEW	21.30%	0.82%	24
WAL MART STORES INC	3.01%	2.94%	4
EBAY INC	25.79%	0.31%	70
INTEL CORP	4.56%	1.37%	12
YAHOO INC	46.91%	0.18%	113
PROCTER & GAMBLE CO	3.62%	1.47%	11
PFIZER INC	1.93%	2.46%	5
CONOCOPHILLIPS	10.77%	0.46%	49
CORNING INC	76.44%	0.09%	239
3M CO	5.46%	0.65%	34
LOWES COS INC	8.85%	0.41%	54
UNITEDHEALTH GROUP INC	9.78%	0.35%	62
E M C CORP MASS	17.75%	0.20%	106
TEXAS INSTRS INC	9.06%	0.36%	60
CENDANT CORP	21.18%	0.17%	125
AT&T WIRELESS SVCS INC	16.81%	0.19%	108
PROGRESSIVE CORP OHIO	19.50%	0.17%	127
STARBUCKS CORP	26.40%	0.13%	164
PHARMACIA CORP	3.59%	0.72%	32
NIKE INC	15.63%	0.17%	123
NEXTEL COMMUNICATIONS INC	15.93%	0.17%	128
FOREST LABS INC	9.90%	0.25%	81

Data Source: Compustat

## 25 Largest Negative Contributors to the S&P

Stock	Return (%)	End of Quarter Weight	Rank
SBC COMMUNICATIONS INC	-26.01%	0.85%	22
ALTRIA GROUP INC	-26.08%	0.80%	28
AMERICAN INTL GROUP INC	-14.52%	1.65%	9
MICROSOFT CORP	-6.34%	3.32%	1
AOL TIME WARNER INC	-17.10%	0.62%	36
VERIZON COMMUNICATIONS	-8.77%	1.24%	15
TYCO INTL LTD NEW	-24.71%	0.33%	66
COCA COLA CO	-7.66%	1.28%	14
BELLSOUTH CORP	-16.24%	0.52%	43
AT&T CORP	-37.95%	0.16%	130
VIACOM INC	-10.40%	0.82%	27
LILLY ELI & CO	-10.00%	0.82%	25
UNITED PARCEL SERVICE INC	-9.64%	0.82%	26
SCHERING PLOUGH CORP	-19.68%	0.34%	65
BOEING CO	-24.04%	0.26%	80
BAXTER INTL INC	-33.43%	0.14%	141
HEWLETT PACKARD CO	-10.43%	0.61%	37
AUTOMATIC DATA PROCESSING INC	-21.55%	0.24%	89
MBNA CORP	-20.87%	0.25%	82
GENERAL DYNAMICS CORP	-30.62%	0.14%	144
SCHWAB CHARLES CORP NEW	-33.46%	0.12%	167
FIFTH THIRD BANCORP	-14.21%	0.37%	58
LOCKHEED MARTIN CORP	-17.66%	0.28%	75
DUKE ENERGY CORP	-25.59%	0.17%	126
US BANCORP DEL	-10.56%	0.47%	48

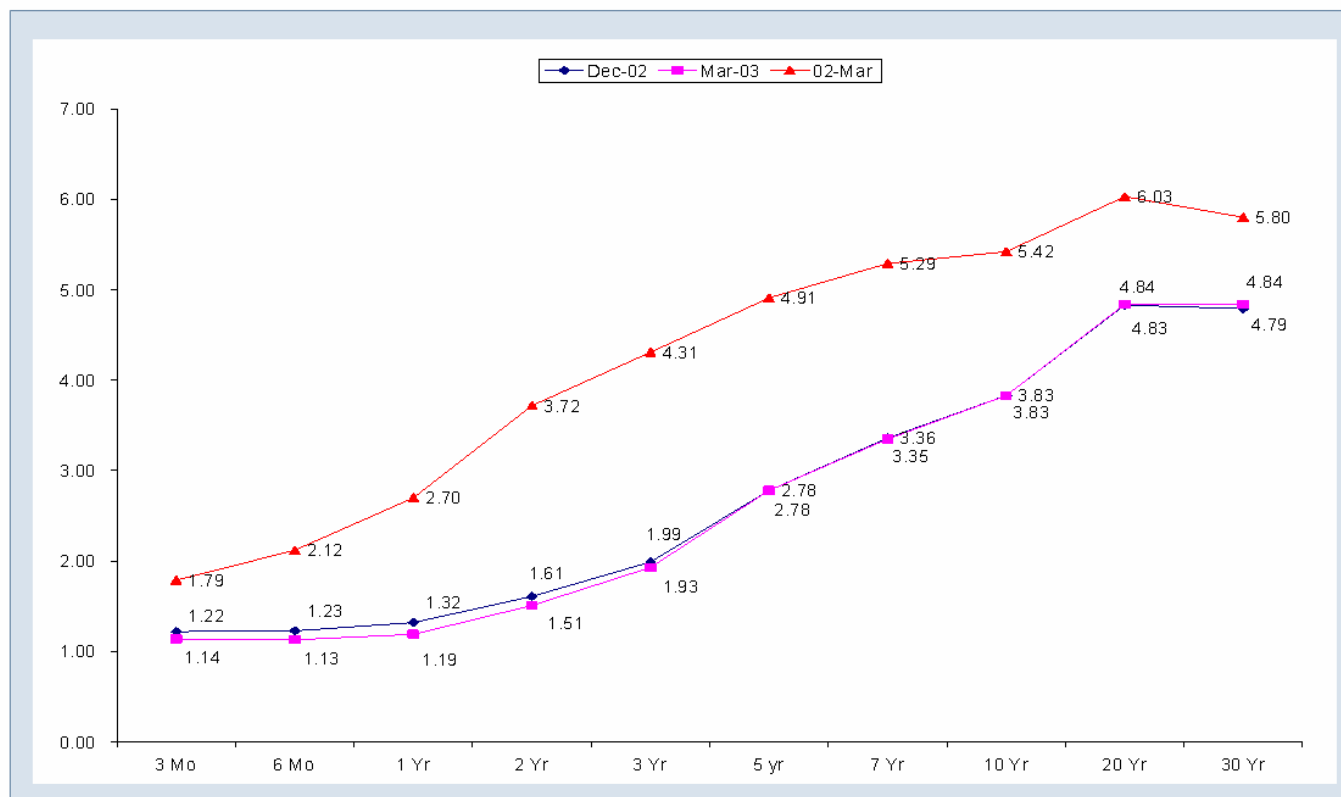
Report Date: April 21, 2003

## Fixed Income Markets

- Corporate bonds bounce back, high yield leads rally.
- Interest rates remained relatively stable over the quarter.
- The Lehman Brothers Aggregate Index recorded a 1.4% return, while the LB Long US Gov't/Credit Index gained 2.1%.
  - Credit sectors outperformed US Treasuries during the quarter.
  - Within industrials, telecommunications issuers posted the best results with the wireless issues leading the pack at 7.9%.
  - Mortgage backed issues produced only modest gains of 0.9%
- Lower quality issues in general outperformed higher quality issues.

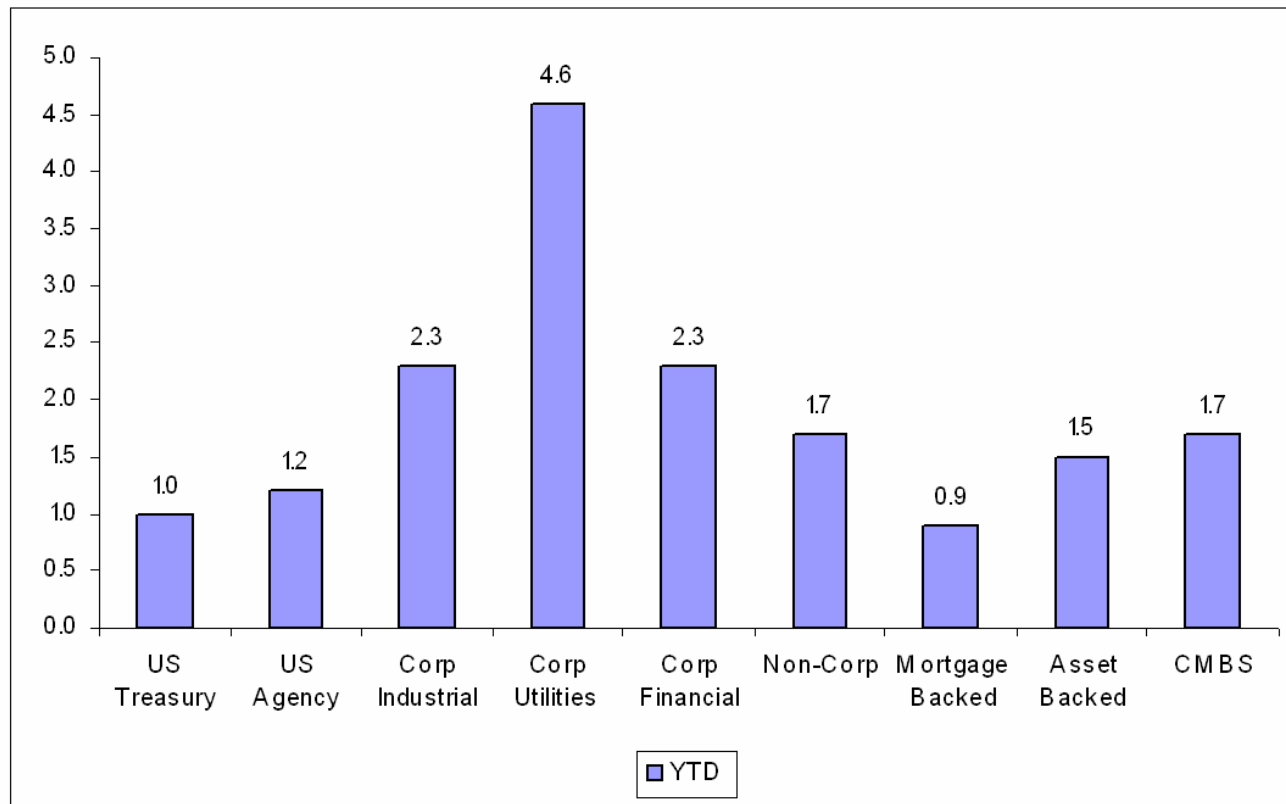
## U. S. Treasury Yield Curve

Relatively Unchanged During the Quarter



## Fixed Income Returns by Issuer

### First Quarter 2003



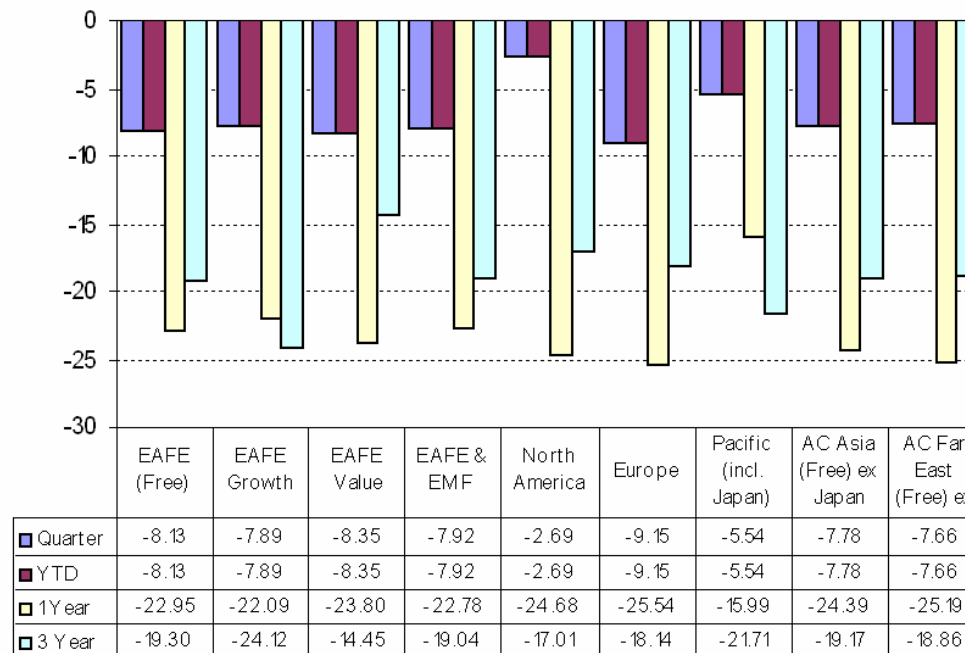
## Non-U.S. Equity Performance

- International equities in sync with U.S. markets, sustain large losses.
- The MSCI EAFE Index lost 8.1% during the first quarter of 2003. The euro-zone suffered the largest loss of 10.5%, while the UK and Japan declined by 8.6% and 7.8%, respectively.
- Country returns varied significantly. Seven European countries suffered double-digit losses, led by Belgium's -17.2% return. Just five EAFE countries posted first quarter gains.
- The US dollar depreciated by 3.8% against the euro and 1.9% against the sterling pound during the quarter. The dollar was flat against the Japanese yen.

# International Market Performance

## First Quarter 2003

MSCI Regional Index Returns (US\$)



## Other Asset Classes

- Real estate finishes 2002 with record 20- year spread over equities; REITs gain modestly in the first quarter.
- The NACREIF Classic Property Index (includes only properties without debt) returned 1.3% in the fourth quarter (returns lag by one quarter) resulting in a 4.8% gain for 2002.
- Leveraged properties posted a slightly higher return of 6.8% for 2002 (NCREIF Property Index) due to higher percentage of retail properties (regional and super-regional malls) than in the Classic Property Index. This return was the largest spread over equities in 20 years.
- REITs post a modest 0.8% return for the first quarter.
- Retail properties posted the best results in 2002.
- Apartments suffered declining income returns.
- Conditions which will make it difficult for office properties to gain value are related to employment growth.





## **ASRS Total Fund Performance**

## Total Fund Performance

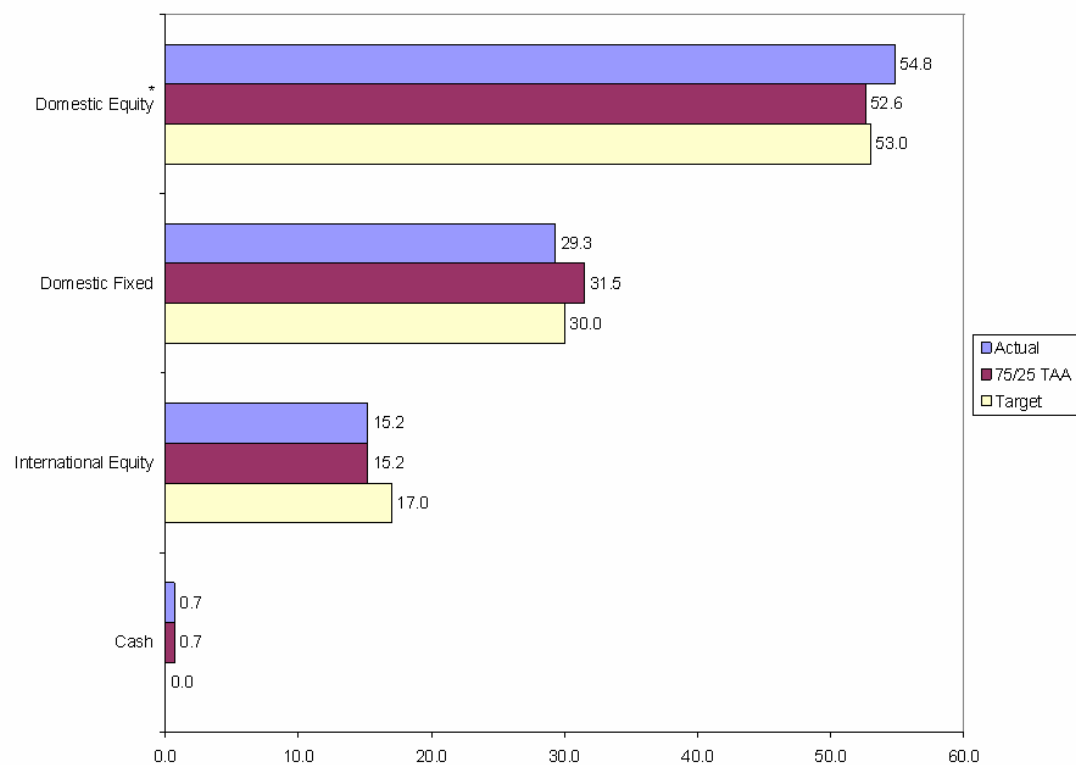
For Periods Ending March 31, 2003

	<u>Quarter</u>	<u>1 Year</u>	<u>3 Years</u>	<u>5 Years</u>	<u>Inception</u>
Total Fund	-2.9%	-15.3%	-8.6%	0.4%	10.4%
Benchmark*	-2.7	-14.2	-9.1	-0.7	8.2
RM Public Funds Median	-1.9	-12.0	-7.0	0.9	—

\*1/1/89-12/31/91 is 60% S&P 500/40% LB Aggregate,  
 1/1/92-12/31/94 is 50% S&P 500/40% LB Aggregate/10% EAFE,  
 1/1/95-6/30/97 is 45% S&P 500/40% LB Aggregate/15% EAFE,  
 7/1/97-12/31/99 is 50% S&P 500/35% LB Aggregate/15% EAFE, and  
 1/1/00-Present is 53% S&P 500/30% LB Aggregate/17% EAFE.

## Total Fund Asset Allocation

March 31, 2003



\* Domestic equity includes BGI TAA

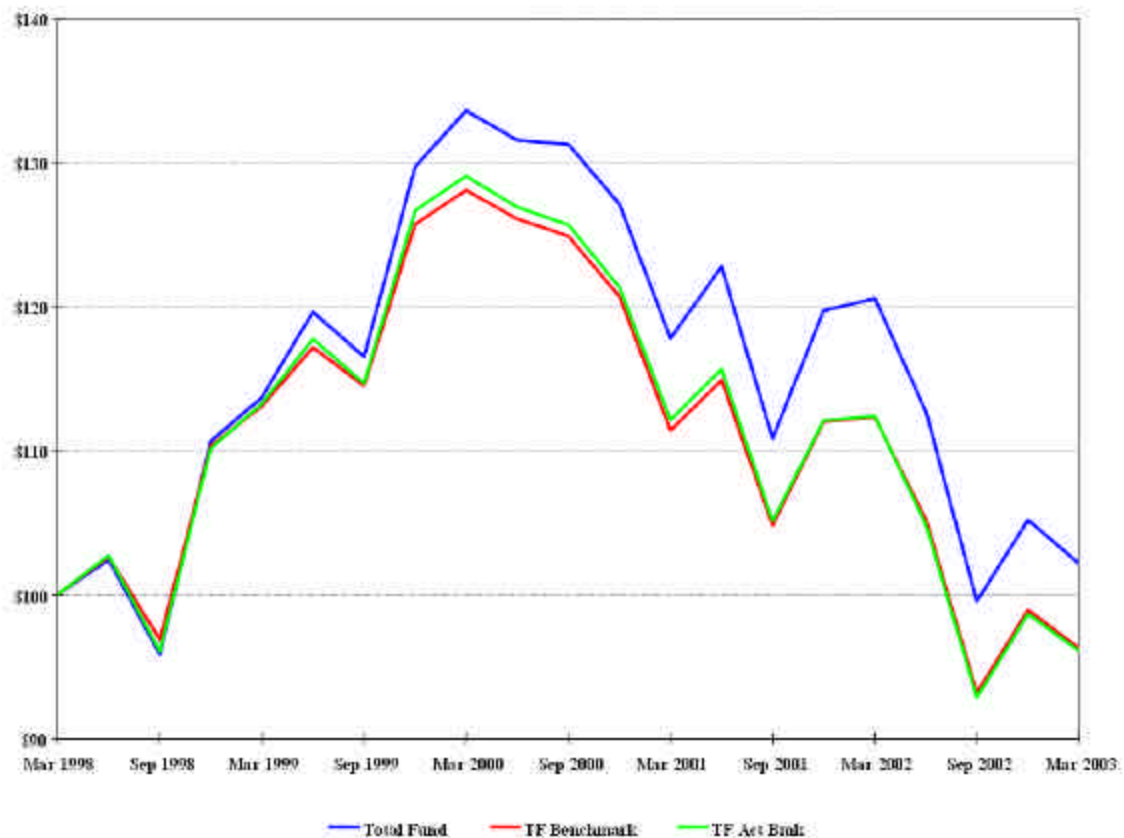
## **Total Fund Performance**

### For the Year Ending March 31, 2003

- Measured against:
  - Asset Allocation Target of 8.5% Annually
    - Total Fund has underperformed by 23.8%
  - Inflation + 3.0% annually
    - Total Fund has underperformed by 21.3%
  - Actuarial assumption rate of 8.0% annually
    - Total Fund has underperformed by 23.3%

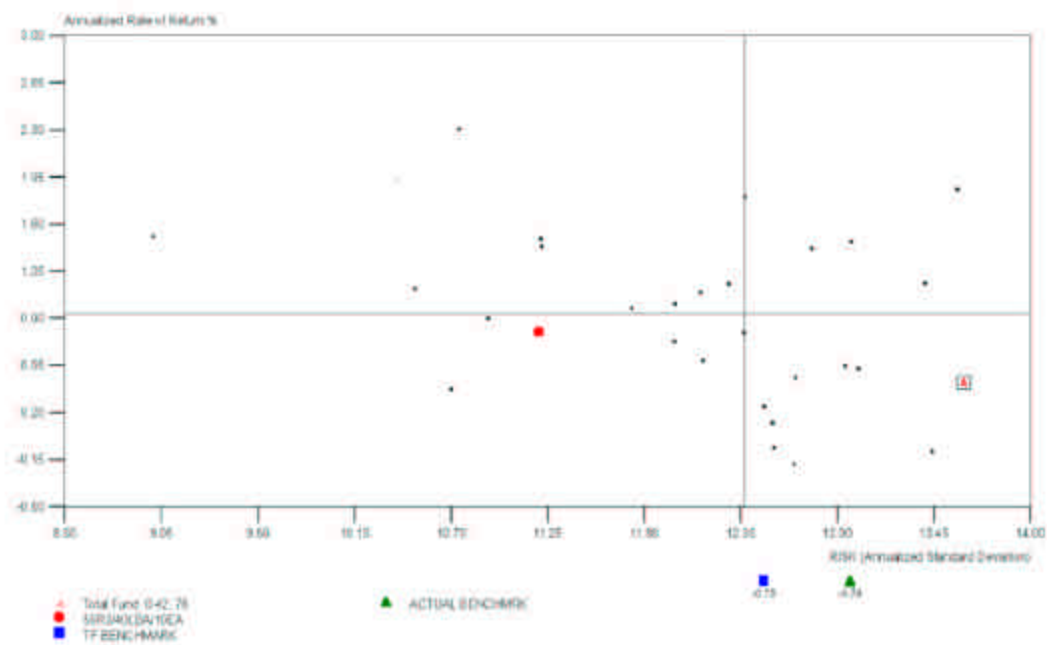
## Total Fund Growth

**Total Fund**  
Value of \$100 invested from Apr 1998 to Mar 2003

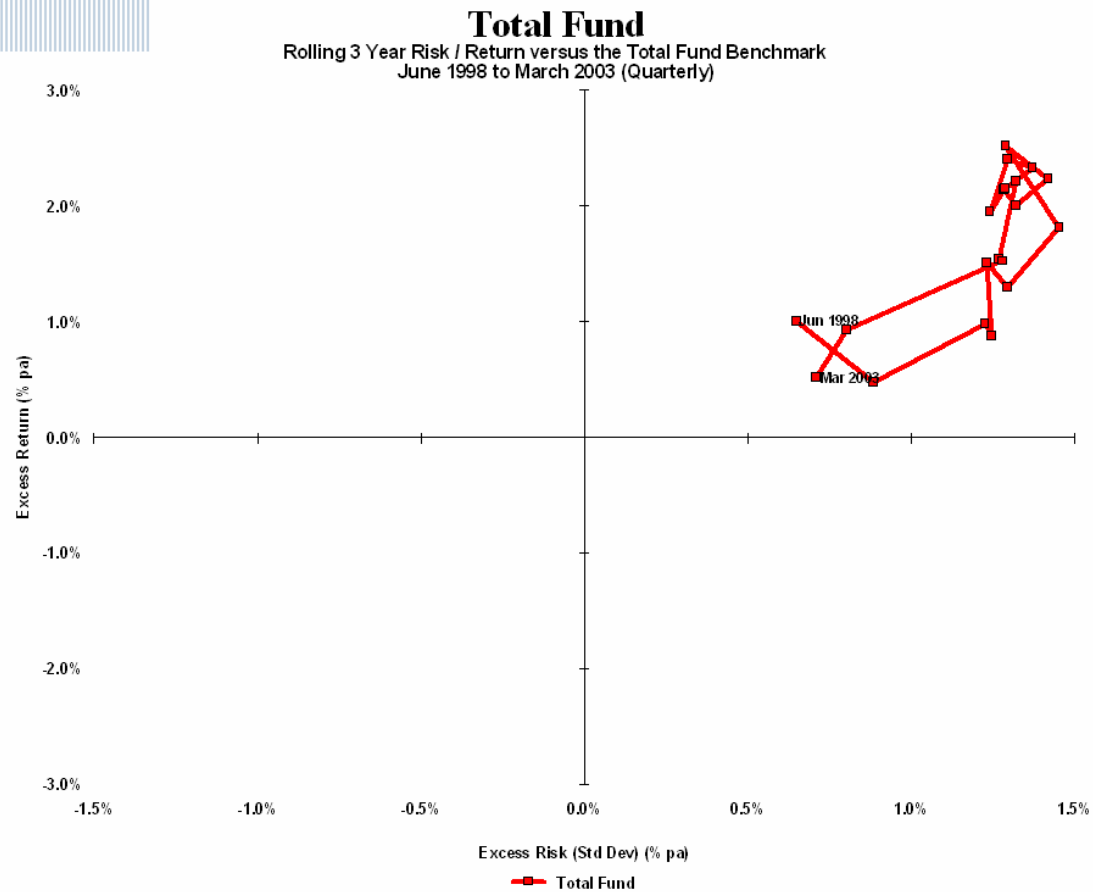


# Total Fund Return/Risk Analysis

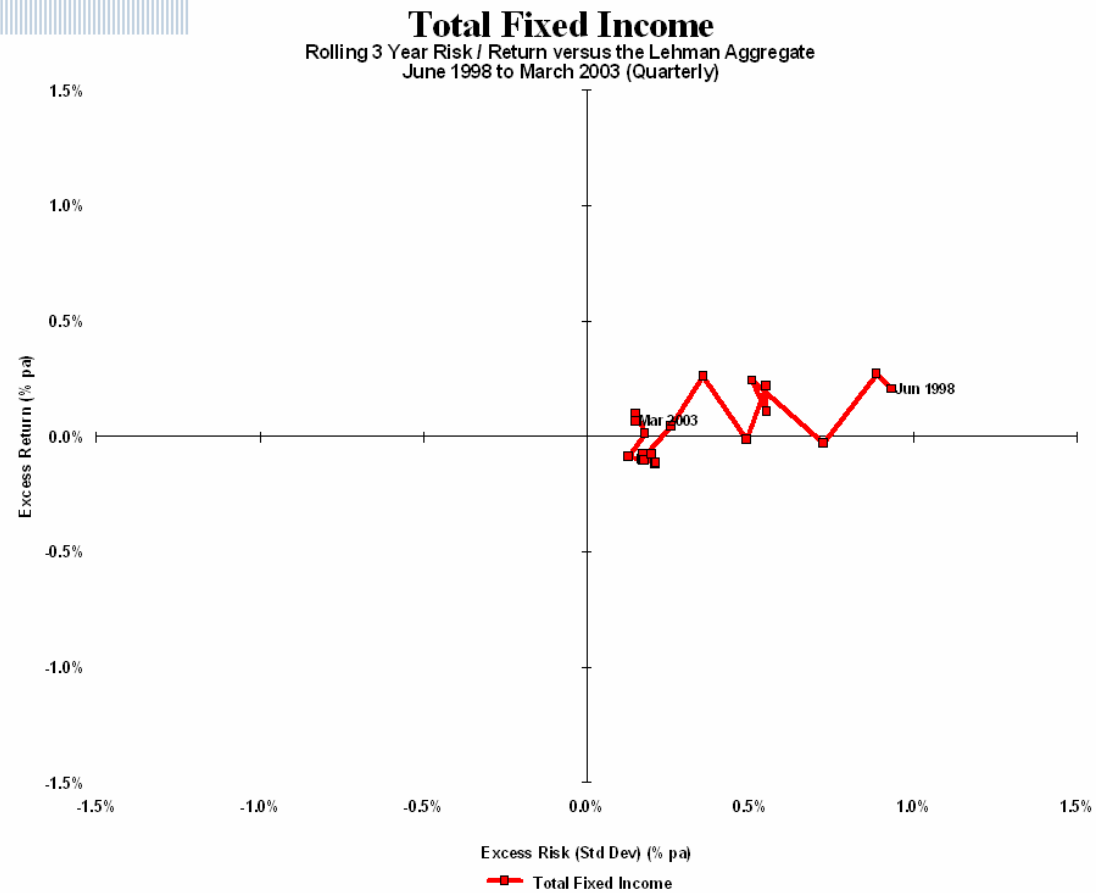
Total Funds Billion Dollar - Public  
Risk-Return Comparisons  
5 Years Ending March 31, 2003  
26 Portfolios



# Risk/Return Analysis

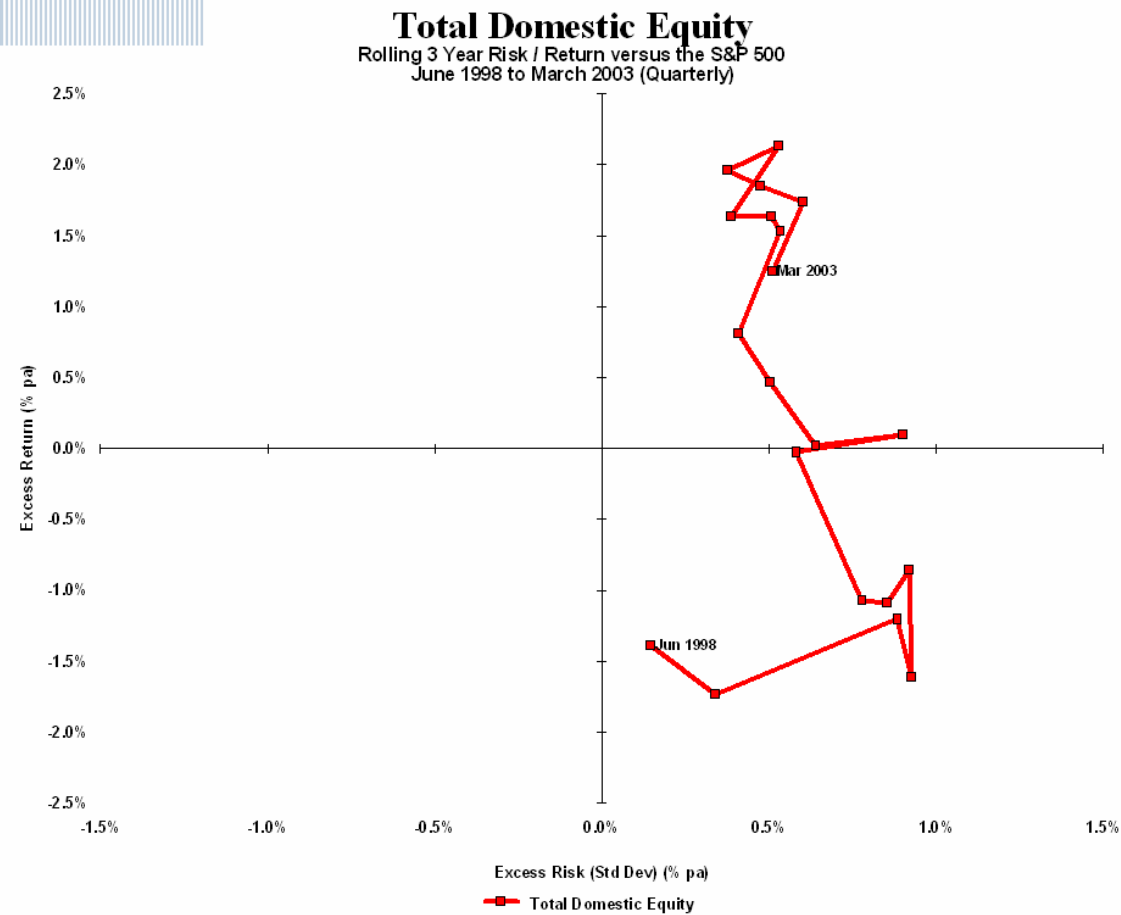


# Return/Risk Analysis

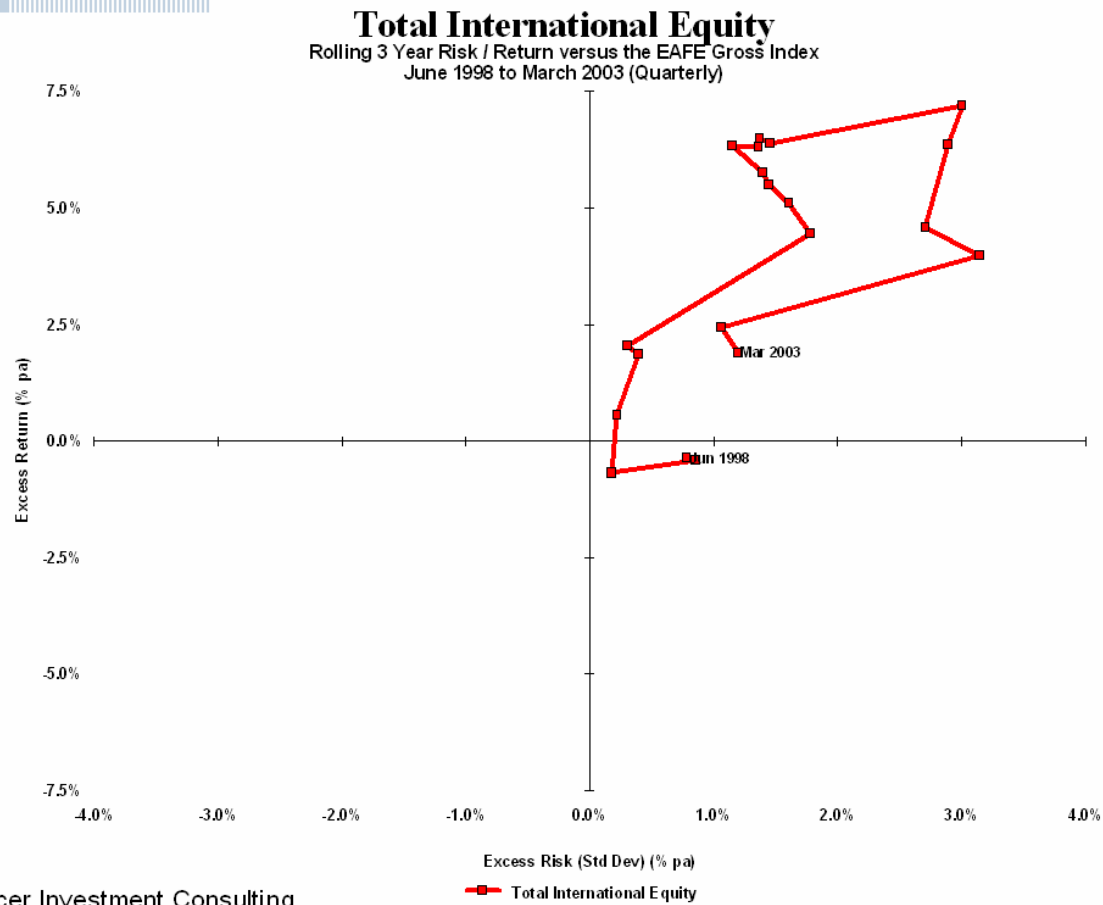




## Return/Risk Analysis



# Return/Risk Analysis



## Performance vs. Benchmarks

For the 3 Years Ending March 31, 2003

	<u>Return</u>	<u>Assumed ROR</u>	<u>Std. Dev.</u>	<u>Assumed Std. Dev.</u>
Total Fund	-8.6%	8.4%	12.2%	11.8%
Benchmark	-9.1		11.5	
Domestic Fixed	9.9	5.6	3.6	5.3
LB Aggregate	9.8		3.4	
Domestic Equity	-14.8	9.4	19.1	16.3
S&P 500	-16.1		18.6	
Intl. Equity	-17.4	10.0	17.5	21.5
EAFE	-19.3		16.3	

## Performance vs. Benchmarks

For the 5 Years Ending March 31, 2003

	<u>Return</u>	<u>Assumed ROR</u>	<u>Std. Dev.</u>	<u>Assumed Std. Dev.</u>
Total Fund	0.4%	8.4%	14.0%	11.8%
Benchmark	-0.7		12.8	
Domestic Fixed	7.5	5.6	3.8	5.3
LB Aggregate	7.5		3.6	
Domestic Equity	-2.9	9.4	21.2	16.3
S&P 500	-3.8		20.7	
Intl. Equity	-3.2	10.0	22.0	21.5
EAFE	-6.9		20.2	